A SOLE FOR MOVEMENT IN PARTICULAR ON SHIFTING GROUND

The present invention concerns shoe soles intended for improving movement on shifting ground such as sand and for eliminating the sucker effect on all kinds of ground.

The existing soles in the state of their various forms and structures do not make it possible to combine a stable and effortless movement on shifting ground such as sand, and the elimination of the sucker effect on all types of ground (smooth and hard for example).

The present invention remedies this problem. The soles according to the invention in fact remedy the difficulties of movement (instability and effort) on shifting ground such as sand and the sucker effect on all types of ground.

To this end the soles have a structure which on the one hand traps and compresses a portion of the shifting material (such as sand) on which a person is moving by the simple physical effect of the walking and, on the other hand, eliminates the sucker effect on all types of ground. The soles proposed have a structure which has firm abutment points on loose ground.

Because of this principle, movement is thereby stable and rapid on loose sand and eliminates the sucker effect on all types of ground.

The object of the present invention is therefore a sole for walking comprising a face intended to be in contact with the ground, referred to as the bottom part, and an opposite face called the top part, principally characterised in that it comprises, in the bottom part, recesses closed off by the top part for trapping a portion of material on which a person is moving, each recess being provided with at least one decompression channel producing a free junction between the inside of the recesses and the external perimeter of the sole.

According to another characteristic, the decompression channels can be disposed around recesses in the bottom part of the sole so as to be in contact with the ground.

According to another characteristic, the decompression channels can be disposed around recesses at any height on the wall of these recesses.

According to another characteristic, the decompression channels have a height substantially equal to that of the recesses.

According to another characteristic, for one and the same sole, the recesses provided with decompression channels are at least two in number.

According to another characteristic, for one and the same sole, the depth of the recesses can be identical.

According to another characteristic, for one and the same sole, the depth of the recesses can be different.

According to another characteristic, for one and the same sole, the walls of the recesses form an angle of less than or equal to 90° with respect to the face of the sole intended to be in contact with the ground.

According to another characteristic, the external perimeter of the sole forms an angle of less than or equal to 90° with respect to the face of the sole intended to be in contact with the ground.

According to another characteristic, the sole can consist of only one or several superimposed layers of material, the recesses and the decompression channels being formed on at least the bottom layer intended to be in contact with the ground.

Other particularities and advantages of the invention will emerge clearly from a reading of the description made below, given by way of illustrative and non-limiting example and with regard to the drawings, in which:

Figure 1 depicts the plan view from below of a sole according to the invention,

Figure 2 depicts the perspective view of a sole according to the invention,

Figure 3 depicts a variant view in perspective of a sole according to the invention,

Figure 4 depicts a transverse section AA in the longitudinal direction of a sole according to the invention,

Figures 5 and 6 depict variant positionings of the channels seen in partial transverse sections.

For a better understanding of the invention, a

sole is defined, whether this sole consists of one or more layers of superimposed material or not, as having in all cases a face 1 intended to be in contact with the ground, referred to as the bottom part, and an opposite face 2 referred to as the top part.

With reference to the drawings, the sole comprises in its bottom part 1 recesses 3 provided with decompression channels 7.

The decompression channels 7 produce a junction between the inside of the recesses 3 and the external perimeter 8 of the sole.

The decompression channels 7 have geometric or any shapes and dimensions.

The decompression channels 7 are positioned on the bottom part of the sole or at any height on the wall of the recesses 3 (Figure 5). According to a variant embodiment, the decompression channels have a height equal to or substantially equal to the total height of the recesses 3 (Figure 6).

The recesses 3 provided with decompression channels 7 have geometric or any shapes and dimensions; the bottom of these recesses is closed by the top part 2. Their walls form an angle less than or equal to an angle of 90 degrees with respect to the face 1 intended to be in contact with the ground (the base of the sole).

The thickness of the material 4 corresponds to the depth of the recesses 3; this thickness of material 4 consists of a single layer or several homogeneous or heterogeneous layers for decorative purposes, strength

or rigidity, one thickness of material 5 or several capping the thickness 4.

According to the variant (Figures 3) the base element 6 in which the recesses 3 are produced without passing through it completely is either a thickness of material consisting of a single layer with the same composition or consisting of several homogeneous or heterogeneous layers for decorative purposes, strength or rigidity, or a hollow element provided with a strong envelope.

The external perimeter 8 of the sole has an angle equal to, less than or greater than 90 degrees.

The profile of the top part 2 can be ergonomic or flat.

The profile of the bottom part 1 can be ergonomic or flat.

The recesses provided with decompression channels occupy a large surface area on the total surface of the sole, as can be seen in the diagrams.

These recesses provided with decompression channels are produced from all types of material, whether they be natural, synthetic, synthesised, etc.

These recesses provided with decompression channels are produced in a first thickness of material with the same composition or consisting of homogeneous or heterogeneous layers whilst passing through it completely, one or more thicknesses capping this first thickness (Figure 2).

These recesses provided with decompression channels are also produced, without passing through it,

in a thickness of monolithic material with the same composition or consisting of homogeneous or heterogeneous layers (Figure 3).

In a variant execution the sole may not be solid but hollow. The recesses provided with decompression channels are in this case produced in a hollow element provided with a strong envelope. The sole is then in the form of a strong envelope consisting of a face intended to be in contact with the ground, a perimeter defining the external border of the sole and a face opposite to the face intended to be in contact with the ground. The face intended to be in contact with the ground has internal walls defining the shape of the recesses and of the decompression channels.

The recesses and decompression channels are produced according to known techniques best suited to the material constituting the soles: manually or mechanically by cutting, drilling, trimming, milling, pressing, extrusion, moulding or any other non-limiting technical means for obtaining a recess and channels.